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Report No.: 1803WSU014-U2 Report Version: Issue Date: 06-05-2018

# **RF Exposure Evaluation Declaration**

FCC ID : 2AOE2REX3B

: Zhejiang Raying IoT Technology Co., Ltd. APPLICANT

**Application Type** : Certification

**Product** : 2.4G Zigbee Module

Model No. : REX3B

FCC Classification: Digital Transmission System (DTS)

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Approved By : Marlinchen





The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standards through the calibration of the equipment and evaluated measurement uncertainty herein.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Suzhou)

FCC ID: 2AOE2REX3B Page Number: 1 of 5



## **Revision History**

Report No.	Version	Description	Issue Date	Note
1803WSU014-U2	Rev. 01	Initial report	05-23-2018	Invalid
1803WSU014-U2	Rev. 02	Change applicant and manufacturer information	06-05-2018	Valid

FCC ID: 2AOE2REX3B Page Number: 2 of 5



## 1. PRODUCT INFORMATION

## 1.1. Equipment Description

Product Name	2.4G Zigbee Module
Model No.	REX3B
Frequency Range	802.15.4: 2405 ~ 2480 MHz
Type of Modulation	O-QPSK
Date Rate	250kbps
Type of Antenna	PCB Antenna

FCC ID: 2AOE2REX3B Page Number: 3 of 5



### 2. RF Exposure Evaluation

#### 2.1. Limits

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

#### LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range	Electric Field	Magnetic Field	Power Density	Average Time	
(MHz)	Strength (V/m)	Strength (A/m)	(mW/cm <sup>2</sup> )	(Minutes)	
(A) Limits for Occupational/ Control Exposures					
300-1500	-	1	f/300	6	
1500-100,000			5	6	
(B) Limits for General Population/ Uncontrolled Exposures					
300-1500			f/1500	6	
1500-100,000			1	30	

f= Frequency in MHz

Calculation Formula:  $Pd = (Pout*G)/(4*pi*r^2)$ 

Where

Pd = power density in mW/cm<sup>2</sup>

Pout = output power to antenna in mW

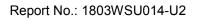
G = gain of antenna in linear scale

Pi = 3.1416

r = distance between observation point and center of the radiator in cm

Pd is the limit of MPE, 1mW/cm<sup>2</sup>. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

FCC ID: 2AOE2REX3B Page Number: 4 of 5





### 2.2. Test Result of RF Exposure Evaluation

Product	2.4G Zigbee Module
Test Item	RF Exposure Evaluation

Test Mode	Frequency Band	Maximum EIRP	Power Density at	Limit
	(MHz)	(dBm)	R = 20 cm	(mW/cm <sup>2</sup> )
			(mW/cm <sup>2</sup> )	
Zigbee	2402 ~ 2480	19.41	0.0174	1

#### **CONCULISON:**

The max Power Density at R (20 cm) = 0.0174mW/cm<sup>2</sup> < 1 mW/cm<sup>2</sup> for Bluetooth.

Therefore, the Min Safety Distance is 20cm.